AUTOMATIC NEUTRALISING FILTER

INSTALLATION & OPERATING INSTRUCTIONS

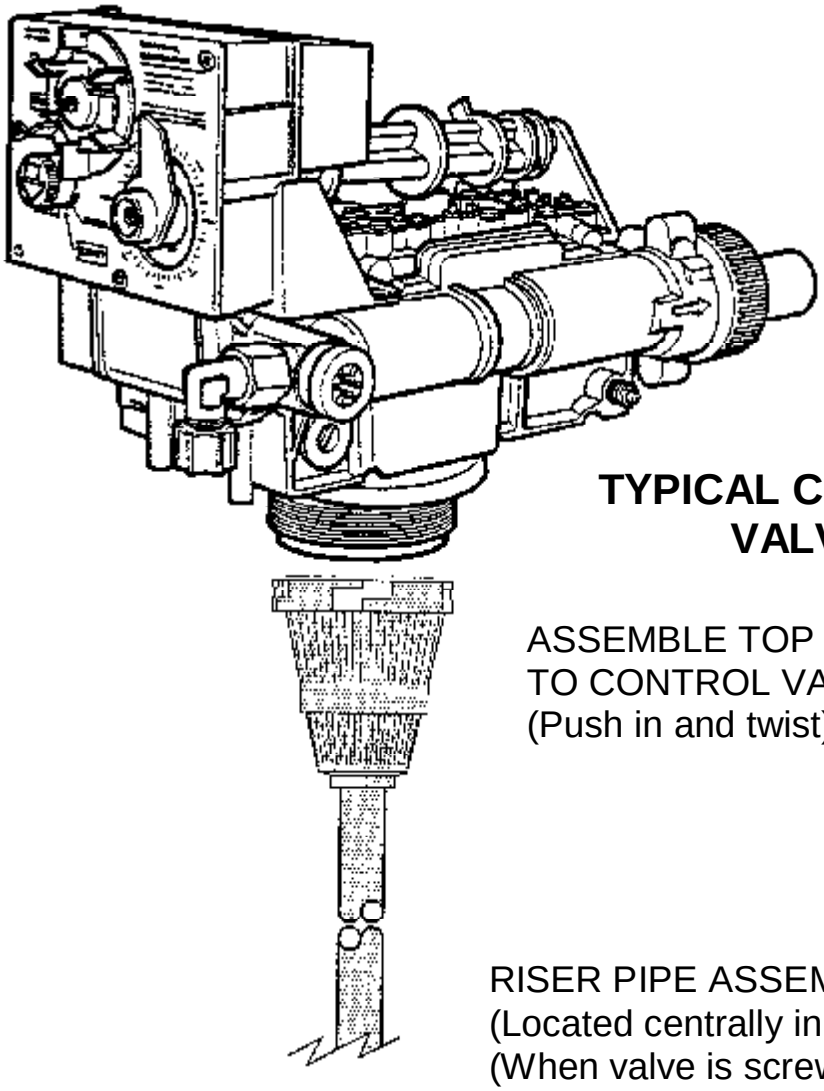
Model: **AFN09-263**

Serial No: **……**

Manufacturer and Supplier of

FILTRATION & WATER TREATMENT PRODUCTS
for commercial, industrial and residential application

Telephone: (07) 3219 2233
Facsimile: (07) 3219 2266
Email: sales@ibcwater.com.au
Website: www.ibcwater.com.au



TYPICAL CONTROL VALVE

ASSEMBLE TOP STRAINER TO CONTROL VALVE BODY (Push in and twist)

RISER PIPE ASSEMBLY (Located centrally in strainer) (When valve is screwed into tank)

NOTE:

ON A NUMBER OF SOFTENER MODELS & FILTERS IT IS NECESSARY TO PACKAGE THE VALVE WITH THE TOP STRAINER SUPPLIED LOOSE.

IT IS IMPORTANT THAT THIS STRAINER AS ASSEMBLED TO THE VALVE DURING INSTALLATION.

THE LENGTH OF THE INTERNAL RISER PIPE IS FACTORY ADJUSTED FOR THE TANK SIZE PROVIDED.

DO NOT SHORTEN THIS PIPE UNDER ANY CIRCUMSTANCES

WARNING

For proper operation, the inlet water pressure must be between 140 kPa and 690 kPa. If the inlet pressure exceeds 690 kPa, a pressure reduction valve must be fitted prior to the filter.

If water hammer is prevalent, a water hammer arrestor must also be fitted after the filter. Ie. Between the filter and the device causing the effect.

Failure to observe the above will VOID warranty.

An Integral Backflow Prevention device must be fitted to the influent supply.

The Installation must comply with all relevant local and State/Australian Standards Plumbing Codes.

CAUTION:

DO NOT USE WHERE WATER IS MICROBILOGICALLY UNSAFE OR WITH WATER OF UNKNOWN QUALITY

INSTALLATION

1. Position the filter on a flat surface close to a drain or a properly trapped outlet and in a position where the filter can service all the lines, which require filtered water. The filter should be placed far enough away from a water heater to avoid any hot water backup into the filter. The AF model filters require a standard or weatherproof 3-pin 10-amp power point, depending on the location of filter installation.

2. Refer page 8 of “Series 263 Installation, Operation & Maintenance Manual” for plumbing instructions.

3. Remove filter valve from carton. Attach top strainer to bottom of valve. Plug or cover the top end of riser pipe in the tank making sure no media can enter the tube.

4. Fill tank to about 1/3 full with water, making sure the riser pipe is sitting in the middle of the tank. Then using a wide mouth funnel place the media in the tank as follows – levelling each layer before placing next media into the tank. **DO NOT** shake filter to level the media.

5. Remove the plug or cover from the riser pipe making sure you **DO NOT** lift the riser pipe. Top up tank with water. Screw valve onto the tank (hand tight is usually sufficient), making sure the distributor tube is properly inserted into the top strainer

MEDIA PLACEMENT

NEUTRALISING FILTER

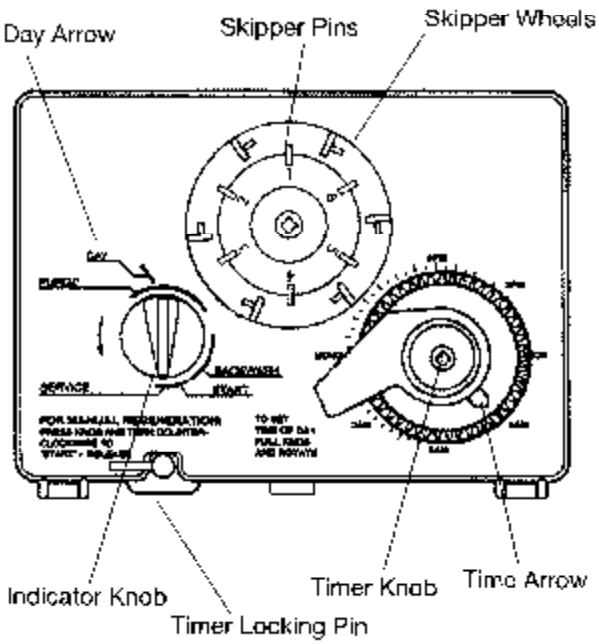
Sequence in Tank	AFN09
1st	5kg #6 Gravel
2nd	30kg Neutralite

The neutralising filter is utilised to raise the pH of the water.
The raw water should not contain any suspended solids or matter.

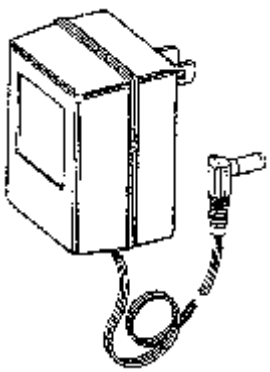
The filter should be given an initial backwash only and should only require backwashing once a week.

The media will dissolve over a period of time and will have to be replenished on a regular basis. It is advisable to check the pH of the treated water on a weekly basis and the media will have to be replenished when the test shows that the pH is not being increased

440i Low Voltage Timer Control



Low Voltage Transformer
Only use the included transformer for powering the 440i timer. Connect the plug of the transformer secondary cable to the mating socket at the rear of the timer housing on the motor



Be certain that the transformer is plugged into a correct voltage source

Increasing the length of the Transformer cord
If it is necessary to extend the length of the transformer cord, an optional 15 foot (4.6m) extension is available

Extension Cord - Part No. 1000907

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Installation

All plumbing and electrical connections must conform to local codes.

Inspect unit carefully for carrier shortage or shipping damage.

Location Selection

1. The distance between the unit and a drain should be as short as possible.

2. It is likely that supplementary water treating equipment will be required, make certain adequate space is available

3. Do not install unit closer to a water heater than a total run of 10 feet (3m) of piping between the outlet of the conditioner and the inlet to the heater. Water heaters can sometimes overheat to the extent they will transmit heat back down the cold pipe into the unit control valve.

   Hot water can severely damage the conditioner. A 10 foot (3m) total pipe, including bends, elbows, etc., is a reasonable to help prevent this possibility. A positive way to prevent hot water from flowing from heat source to the conditioner, in the event of a negative pressure situation, is to install a check valve in the water piping from the conditioner. **If a check valve is installed, make certain the water heating unit is equipped with a properly rated temperature and pressure safety relief valve. Also, be certain that local codes are not violated**

4. DO not locate unit where it or its connections (including the drain and overflow lines) will ever be subjected to room temperatures under 34ºF (1ºC) or over 120ºF (49ºC).

5. Do not install unit near acid or acid fumes.

Water Line Connections

A bypass valve system must be installed since there may be occasions when the water conditioner must be bypassed for unfiltered water or for servicing.

The most common bypass systems are the Autotrol Bypass Valve (Figure 1) and plumbed-in globe valves (Figure 2). Though both are similar in function, the Autotrol Bypass offers simplicity and ease of operation.

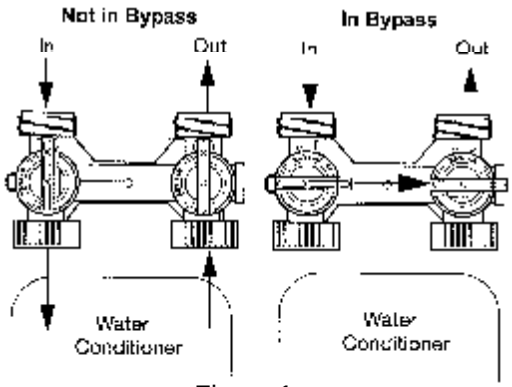


Figure 1

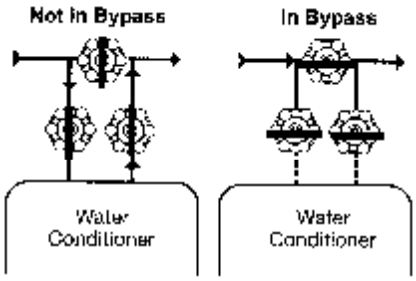


Figure 2

Drain Line Connection

1. If ideally located, the unit will be above and not more than 20 feet (6.1m) from the drain. For such installations connect 1/2-inch (1.3cm) plastic tubing to drain line connection located on the control.

2. If he unit is located more than 20 feet (6.1m) from drain, use 3/4-inch (1.9cm) tubing for runs up to 40 feet (12.2m). Also purchase adapter to bush tubing down to drain line connection fitting.

3. If unit is located where the drain line must be elevated, you may elevate the line up to 6 feet (1.8m) providing the run does not exceed 15 feet (4.6m) and water pressure at conditioner is not less than 40 psi (2.8 BAR). You may elevate an additional 10 psi (0.7 BAR).

4. Where drain line is elevated but empties into a drain below the level of the control valve, from a 7-inch (18cm) loop at the far end of the line so that the bottom of the loop is level with the drain line connection. This will provide an adequate trap.

> **Caution**
>
> **Never connect drain line into a drain, sewer line or trap. Always allow an air gap between the drain line and the wastewater to prevent the possibility of sewage being back-siphoned into conditioner.**

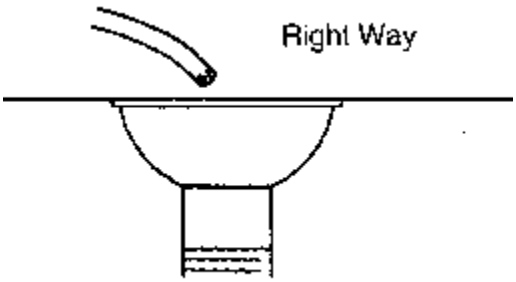


Figure 3

Electrical Connection

- **240Volt 10amp Mains Supply.**
- **Transformer supplied to reduce to 12V.**
- **Plug lead end into socket on back of TIMER Motor.**

Placing Conditioner into Operation

After all previous steps have been completed, the unit is ready to be placed into operation. Follow these steps carefully.

1. Remove control valve cover by springing back the rear plastic tab at the end of the camshaft. Lift the back of the cover and slide forward.

Note: The following steps will require you turning the pointer knob, (Figure 4), to various positions. Insert a wide blade screwdriver into arrow slot in pointer knob and press firmly. With the knob held in, rotate COUNTERCLOCKWISE only until arrow or knob points to desired position. (Rotation is made much easier if you grasp the camshaft with your free hand and turn it at the same time). Then permit the knob to spring back out.

2. Insert screwdriver into slot in pointer knob, (Figure 4). Press in and rotate knob COUNTERCLOCKWISE until arrow points directly to the word BACKWASH.

3. Fill mineral tank with water.

   A. With water supply off, place the bypass valve(s) into the "not in bypass" position.
   B. Open water supply valve very slowly to approximately the 1/4 open position.
   C. When all of the air has been purged from the tank (water begins to flow steadily from the drain), open the main supply valve all the way.

> **Caution**
>
> **If opened too rapidly or too far, media may be lost. In this position, you should hear air escaping slowly from the drain line.**

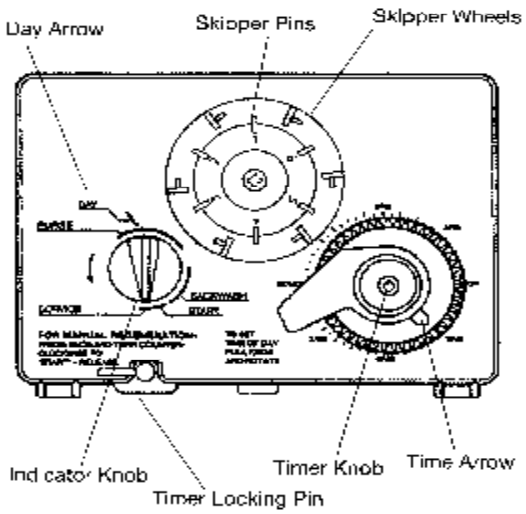


Figure 4

D. Allow water to run to drain until clear.
E. Turn off water supply and let the unit stand for about 5 minutes. This will allow all trapped air to escape from the tank.

4. Put into operation.

A. Open water supply valve slowly to full open position.
B. Advance pointer knob COUNTER-CLOCKWISE to SERVICE.
C. Run water from nearby faucet until the water is clear.

Adjustment of Timer

1. Set days of regeneration on skipper wheel (Figure 4).
   - Pull all skipper pins outward (away from control).
   - Rotate skipper wheel until day arrow points to current day (7-day timer) or number 1 (6-day timer).
   - Depress skipper pin(s) at day(s) for which regeneration is desired.

2. Set the time of day
   - Grasp timer knob and pull outward.
   - Rotate in either direction until actual time - of -day on time dial is in line with time-of-day arrow.
   - Release timer knob.

Note: With the time of day properly set, the conditioner will regenerate at about 2:30a.m. If you prefer to have the unit regenerate at an earlier or later time, simply set the time-of-day accordingly.
Example:
To have the unit REGENERATE/BACKWASH at 4:30 a.m. - 2 hours later - set the clock 2 hours earlier than the actual current time

Special features of timer

Guest Cycle. When abnormally high water usage exhausts your water conditioner's capacity ahead of schedule, an extra regeneration can be achieved by depressing the pointer knob with finger or wide blade screwdriver and turning COUNTER-CLOCKWISE to START. It will take few minutes for regeneration to start. Normal regeneration schedule will not be disrupted.

Manual Regeneration. Electricity is used only to run the timer and rotate the camshaft. All other functions are operated by water pressure. Therefore, in the event of a power outage, all the various regeneration positions may be dialled manually by depressing the pointer knob and turning COUNTERCLOCKWISE.

Manual time cycle:
BACKWASH …….. 20 minutes
RINES ……..10 minutes

Removing the valve assembly for servicing

1. Unplug the power cord.
2. Shut off water supply or put bypass valve into bypass position.
3. Remove cover and with screwdriver, relieve tank pressure by pushing open valve No. 7 (rear flapper on control as shown (Figure 8).

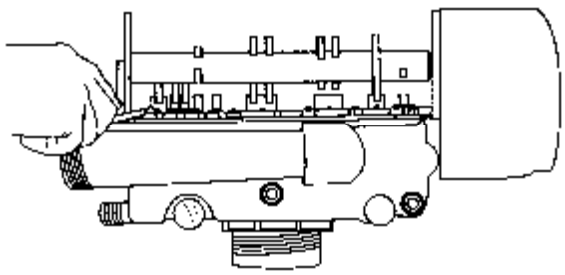


Figure 8

4. When used with a globe valve bypass, loosen and detach the inlet, outlet, brine and drain lines from the valve. If using the 1264 bypass, loosen and remove valve from bypass as well as loosening and removing the brine and drain lines.
5. Unscrew (counterclockwise) and remove valve from tank.
6. To replace the control valve, reverse the above procedure.

Removing 440i or 460i for servicing

1. Unplug the power cord.
2. Remove the cover.
3. Align the indicator arrow on the rear of the camshaft with the top of the rear hoop of the top plate (Figure 16).

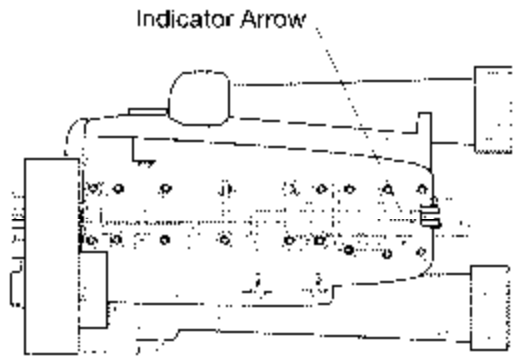


Figure 16

4. Remove the camshaft by carefully pushing the securing tab, located at the rear of the camshaft, away from the camshaft until the tab disengages from the camshaft. Push the back of the camshaft down and out to the inlet side of the valve (Figure 17).

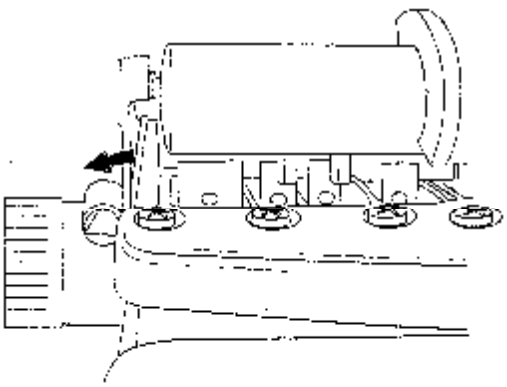
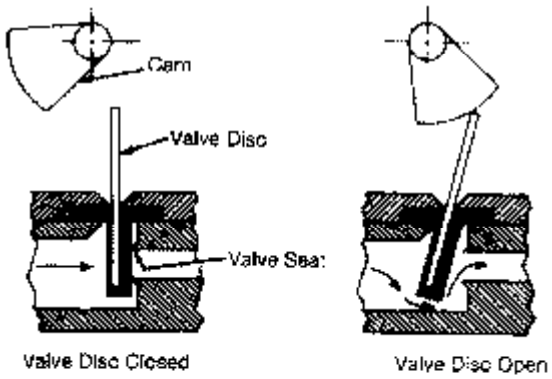


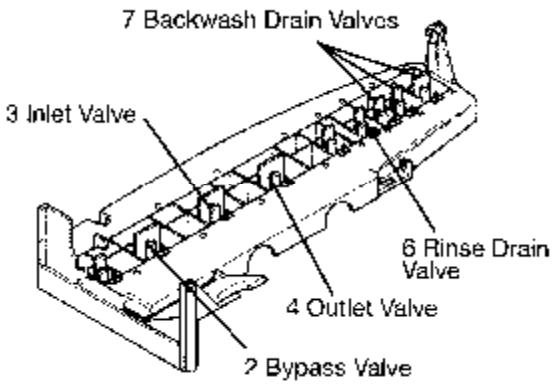
Figure 17

5. Disengage the front of the camshaft from the output gear of the control.
6. Remove the timer locking pin and lift the control straight up and off the valve.
7. To reinstall the camshaft and control, reverse the above procedures.

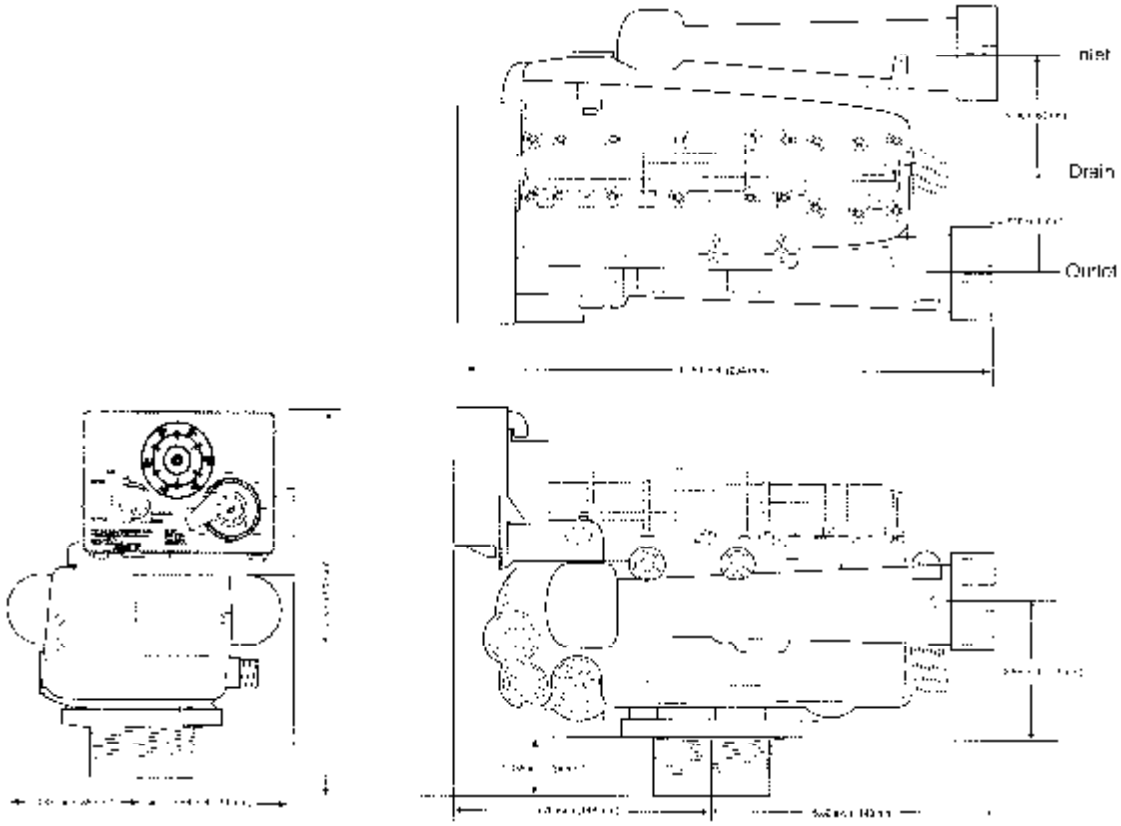
Valve Disc Principle of Operation



Identification of Control Valving



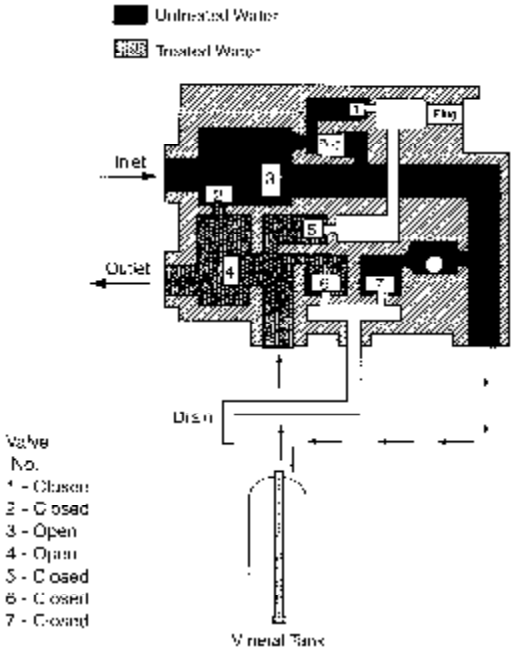
Specifications



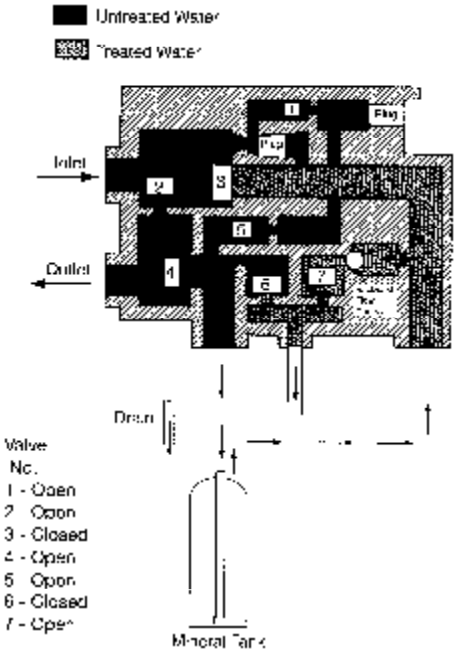
Hydrostatic Test Pressure ..... 300 psi (20.69 bar)
Working Pressure ..... 20-125 psi (1.38 - 8.62 bar)
Standard Electrical Rating ..... 115V 60 Hz
Optional Electrical Rating ..... 115V 50 Hz, 230V 50Hz, 200V 60 Hz, 24V 60Hz, 24V 50 Hz, 100V 60 Hz, 12V 50Hz/transformer, 12V 60 Hz/transformer
Electrical Cord (standard rating) ..... 60 inch (1.5m) 3-wire with plug
Pressure Tank Thread ..... 2 1/2 inch-8 male
Riser Pipe Diameter Required ..... 1.050 inch OD (26.7 mm)
Riser Pipe Length .....1/1/8 ± 1/8 inches (31.8 mm) higher than the top of mineral tank
Standard Connection ..... 1-inch (25.4 mm) copper tube adapters
Optional Connections ..... 31/-inch, 22 mm, and 28 mm copper tube adapters
3/4-inch BSPT, 1-inch BSPT, 1-inch NPT brass pipe adapters
3/4-inch, 1-inch, 25 mm CPVC tube adapters
Drain Line Connection ..... 3/4-inch NPT male
Optional Bypass Valve ..... Rotating handle, full 1-inch porting, reinforced Noryl
Control Module, Tank Adapter ..... Reinforced Noryl
Rubber Goods ..... Compound for cold water service
Program Clock (Timer) ..... 440i: Available in 6 or 7 day English

Flow Diagrams

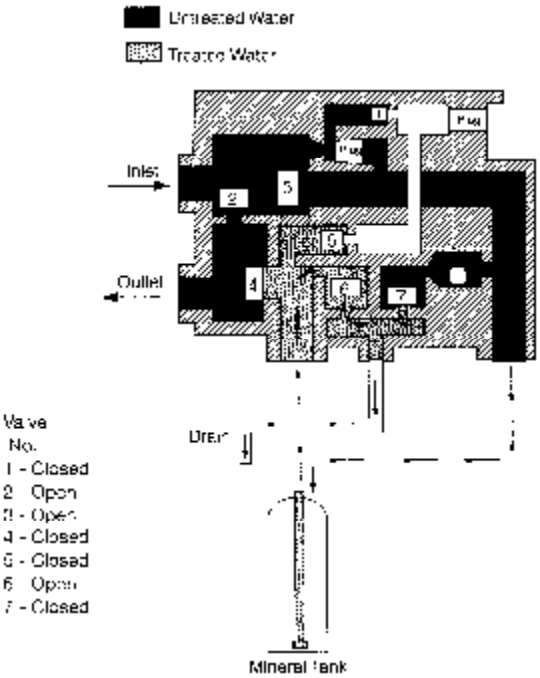
1. Service Position



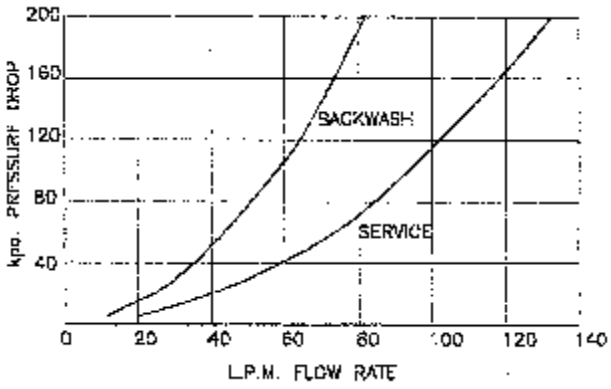
2. Backwash Position



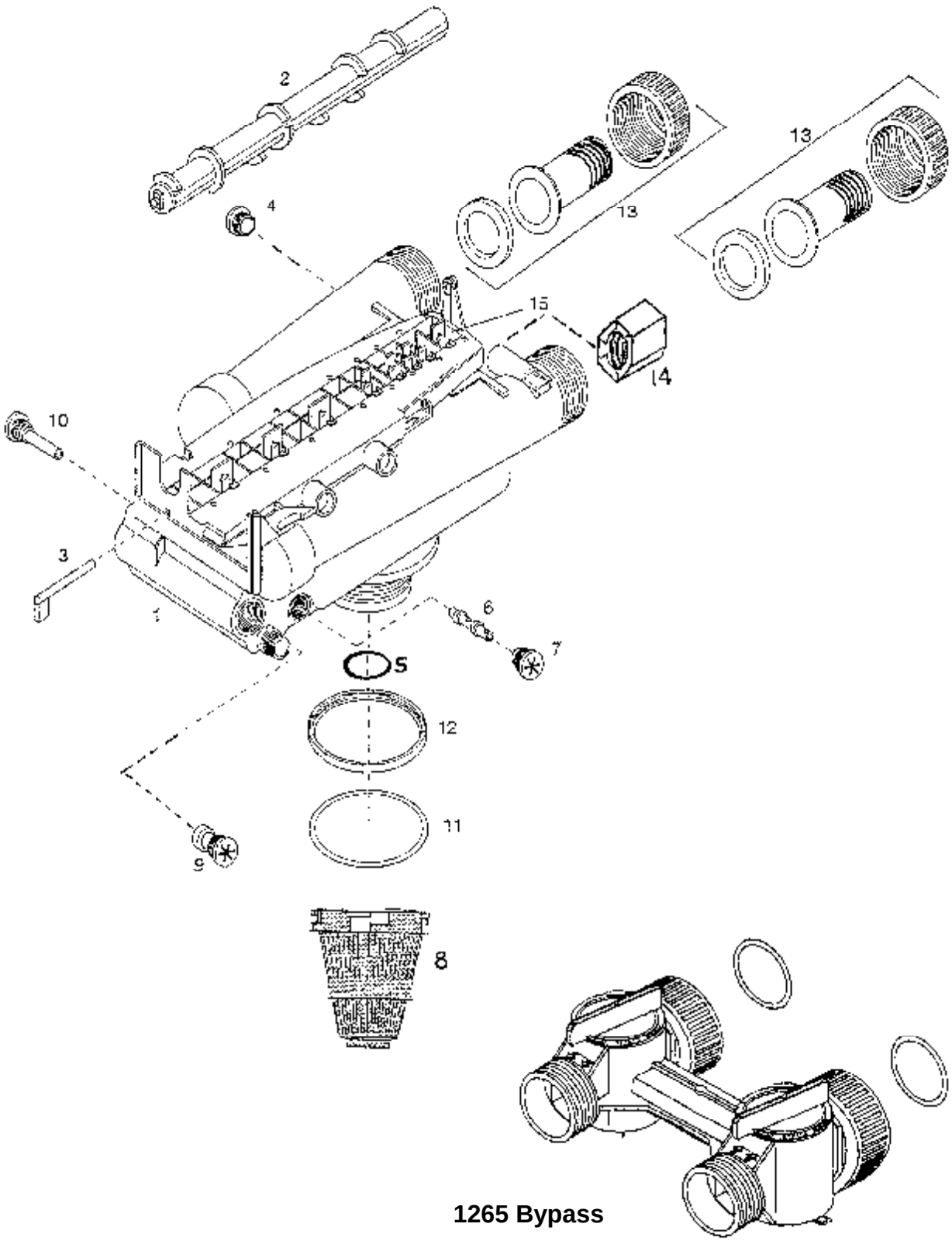
3. Purge Position



Pressure Loss Characteristics



Replacement Parts



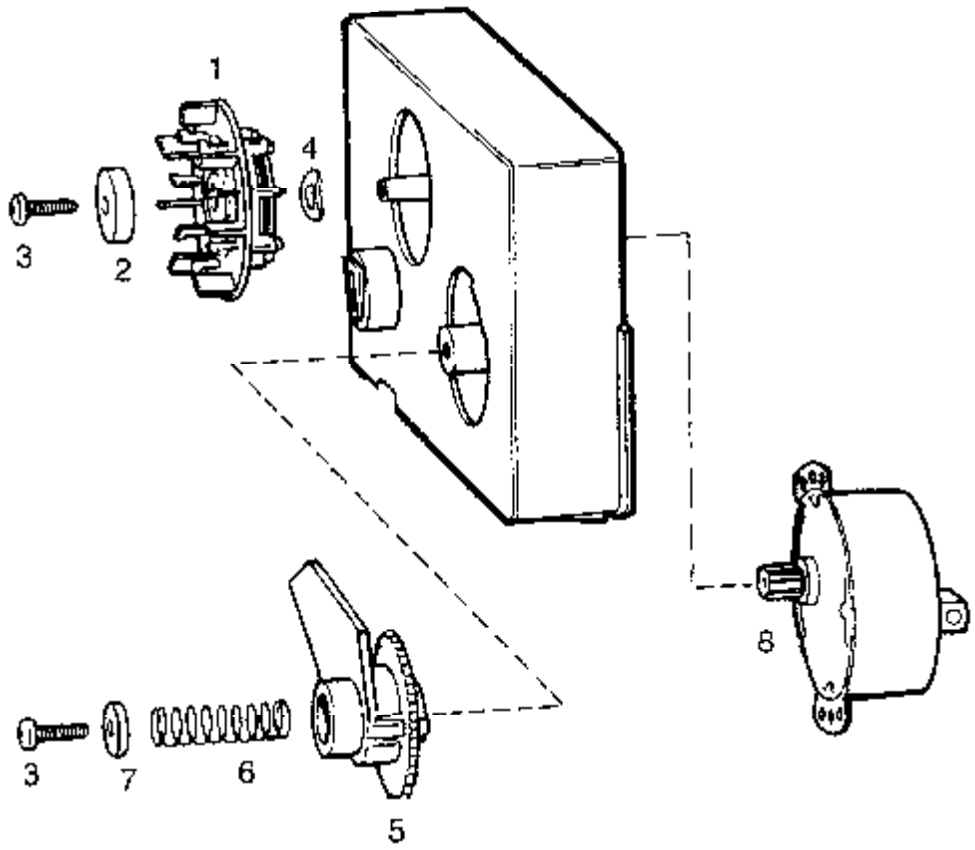
1265 Bypass

Parts List

code	Part No	Description	Qty
1	1035606	Valve Assembly	1
2	1035624	Camshaft 440I	1
3	1301391	Timer Locking Pin	1
4	1000219	Drain Cap	1
5	1010428	Riser O'ring Seal	1
6	1032978	Injector Assembly:	
		- Injector	1
7	1000219	Injector Cap Assembly:	1
		- Cap	
8	D1230	Top Strainer	1
9	1030334	Refill Control Plug	1
10	1000226	Screen/Cap Assembly	1
11	1010429	O'ring	1
12	1035622	Tank Ring	1
13	1001605	Plumbing Adapter Kits:	
		1-inch BSPT Plastic Pipe Adapter Kit	1
14		External Backwash Flow Control	
	MA02320FCFF	AFM09	1
	MA04120FCFF	AFM12	1
15	1001580	Spring, Flapper Valve	1
*		Valve Disc Kit:	
	1041174	Standard	
	1041175	Severe Service	
*	1000062	I-lid Cover	1

* Not Shown

440i Timer



code	Part No	Description	Qty
1		Skipper Wheel Assembly:	1
	1031740	6-Day	
	1301742	7-Day	
2	1030659	Washer	1
3	1006091	Screw, No 6 x 1/2 in	7
4	1006601	Bowed Washer	1
5	1031756	Tripper Arm Assembly	1
6	1030830	Spring	1
7	1030821	Retainer	1
8			1
*	1001568	Motor, 12 Volt, 50 Hz	1
9		Transformer:	
	1000812	Australian	
*	1000907	Transformer Extension Cord 15 ft. (4.6m)	1

Troubleshooting

The technology upon which the series 263 control is based, is well established and proven in service over many years. However, should a problem or question arise regarding the operation of the system, the control can be very easily serviced. For parts mentioned refer to exploded views in the **Replacement Parts** section of this manual.

⚠ Caution

Service procedures that require the water pressure to be removed from the system are marked with a ⚠ after the possible cause. To remove water pressure from the system, put the bypass valve or three-valve bypass into the bypass position and open the Backwash Drain Valve (the sixth valve back from the control) with a screwdriver. Restore system water pressure when the service work is completed.

Problem	Possible Cause	Solution
1. Control will not regenerate automatically.	a. Electric cord unplugged. b. Skipper pins not down on time skipper wheel. c. Defective timer motor.	a. Connect power. b. Depress pins for day's regeneration required. c. Replace motor.
2. Control regenerates at wrong time.	a. Timer set incorrectly.	a. Make correct setting according to instructions.
3. Control backwashes at excessively low or high rate.	a. Incorrect backwash controller used. b. Foreign matter affecting controller operation.	a. Replace with correct size controller. ⚠ b. Remove and clean controller. ⚠
4. Flowing or dripping water at drain after regeneration.	a. Drain valve (5 or 6) held open by foreign matter or particle. b. Valve stem return spring on top plate weak.	a. Manually operate valve stem to flush away obstruction. b. Replace spring.